



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/586,868	06/05/2000	Gordon Caruk	0100.0000430	7484

23418 7590 08/19/2003

VEDDER PRICE KAUFMAN & KAMMHOLZ
222 N. LASALLE STREET
CHICAGO, IL 60601

EXAMINER

KING, JUSTIN

ART UNIT	PAPER NUMBER
----------	--------------

2181

DATE MAILED: 08/19/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/586,868

Applicant(s)

CARUK ET AL.

Examiner

Justin I. King

Art Unit

2181

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 40 is/are allowed.
- 6) ☒ Claim(s) 1-6, 13, 15 and 18-39 is/are rejected.
- 7) ☒ Claim(s) 7-12, 14, 16-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Method and apparatus for switching among multiple graphic controllers and configuring an input/output buffer for an integrated bus bridge.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2, 7-12, 14-15, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The amended claim 2 recites the limitation "the second internal signal" in claim 2's 3rd line. There is insufficient antecedent basis for this limitation in the claim. Based on the interview dated 4/3/03 with Applicant's representative Christopher Reckamp, Applicant agrees the claim 2 should remain its original claim language; thus, Applicant should re-amend the claim 2 back to its original language.

Claims 7-12, 14-15, and 20 are rejected under 35 U.S.C. 112, second paragraph, as they incorporate claim 2's limitations.

Art Unit: 2181

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-6, 13, 15, and 18-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brickford et al. (U.S. Patent No. 6,141,021).

Referring to claim 1: Brickford discloses a first internal circuit operable to provide a first internal signal (figure 3, signals from the structure 118) via a first internal signal path (figure 3, the path connecting structures 118 and 110), and a selector circuit (figure 3, structure 124) coupled to the first internal circuit via the first internal signal path, the selector circuit operable to select either the first internal signal or a first external signal from a first external path (figure 3, signals from structure 122, and the path connecting structures 110 and 120) to provide a selected signal.

Although Brickford does not explicitly disclose an input buffer to receive the external signals, it is a common industrial practice in the computer art to equip an input buffer with the AGP.

Hence, it would have been obvious to one having ordinary skill in the computer art to modify Brickford with common industrial practice at the time applicant made the invention to enhance the graphical processing capability.

Referring to claim 2: Claim 2 is rejected over Brickford as stated above; furthermore, Brickford discloses an output buffer (figure 6, structure 170) to receive a second internal signal (the signal from the AGP controller). Although Brickford does not explicitly disclose a separate second internal signal path for conveying signals into the output buffer, neither Brickford explicitly discloses the output buffer using the same first external signal path to transmit signals out, the court has held that duplication of the working parts of a device and forming in one piece an article which has formerly been formed in two pieces involve only routine skill in the art (St. Regis Paper Co. v. Bemis Co., 193 USPQ 8 and Howarde v. Detroit Stove Works, 150 U.S. 164). Such that it only takes routine skill in the computer art to add an additional internal signal path and to integrate the external output path and external input path into one external path.

Referring to claim 3: Claim 3 is rejected over Brickford as stated above; furthermore, the Brickford's system is inherently operable to propagate graphic signal with a common protocol.

Referring to claim 4: Claim 4 is rejected over Brickford as stated above; furthermore, Brickford discloses a PCI bus protocol (figures 1 and 2).

Referring to claim 5: Claim 5 is rejected over Brickford as stated above; furthermore, Brickford discloses an AGP bus protocol (figure 3).

Art Unit: 2181

Referring to claim 6: Claim 6 is rejected over Brickford as stated above; furthermore, the NGP is a well-known industrial practice at the time applicant made the invention.

Referring to claim 13: Claim 13 is rejected over Brickford as stated above; furthermore, the circuit is inherent to have a bus interface since it has to connect to a bus for conveying graphic signals.

Referring to claim 15: Claim 15 is rejected over Brickford as the argument for claim 2 stated above.

Referring to claim 18: Claim 18 is rejected over Brickford as stated above; furthermore, it is the selector's intended purpose to select signals.

Referring to claim 19: Claim 19 is rejected over Brickford as stated above; furthermore, since the input buffer is meant to convey the signals to the AGP controller rather to the on-chip graphic circuit, it is said that since the input buffer is inoperable to provide the external signal from the external circuit to the first internal circuit.

Referring to claim 20: Claim 20 is rejected over Brickford as the argument for claim 19 stated above; furthermore, the output buffer is an internal buffer designed for conveying the internal signal to the external circuit, therefore, it is said that the output buffer is inoperable to provide the first external signal from the first external signal path to the first internal circuit.

Referring to claim 21: Brickford discloses an internal circuit (figure 3, structure 118), and at internal I/O circuit (figure 3, structure 124), preventing signals from any external circuit (figure 3, structure 122) from reaching the internal circuit. Although Brickford does not explicitly disclose a bridge or a bridge integrated with a graphic circuit, it is a well-known industrial design to equip a north bridge as illustrated in the disclosed prior art to coordinate the

Art Unit: 2181

signal conveyance on a motherboard. The commonly designed north bridge connects to CPU, AGP, and RAM; and the north bridge controls the AGP signals' transmission. The court has held that forming in one piece which has formerly been formed in two pieces and put together involves only routine skill in the art (Howard v. Detroit Stove Works, 150 U.S. 164). Hence, it would have been obvious to integrate a north bridge with Brickford at the time Applicant made the invention because it only involves routine skill in the art.

Referring to claim 22: Claim 22 is rejected over Brickford as the argument for claim 21 stated above.

Referring to claim 23: Claim 23 is rejected over Brickford as the arguments for claims 2 and 7 stated above.

Referring to claim 24: Claim 24 is rejected over Brickford as stated above; furthermore, an "Official Notice" is taken on the following: Although Brickford does not explicitly disclose multiplexing as the selecting mean, the multiplexing is a well-known selecting practice in the computer art.

Referring to claim 25: Claim 25 is rejected over Brickford as stated above; furthermore, Brickford does not disclose any input buffer.

Referring to claim 26: Claim 26 is rejected over Brickford as the argument for claim 4 stated above.

Referring to claim 27: Claim 27 is rejected over Brickford as the argument for claim 5 stated above.

Referring to claim 28: Claim 28 is rejected over Brickford as the argument for claim 6 stated above.

Art Unit: 2181

Referring to claim 29: Brickford discloses a processing unit (figures 1 and 2, structure 14) coupled to a processor bus, a memory unit (figures 1 and 2, structure 18) coupled to a memory bus, and a bus bridge (figure 2, structure 16), coupled to the memory bus; and an internal circuit (figure 3, structure 124) operably configured to avoid signals from the external graphics bus (figure 3, structures 120 and 122). Although Brickford discloses a bus bridge and a graphic unit separately, the court has held that forming in one piece which has formerly been formed in two pieces and put together involves only routine skill in the art (*Howard v. Detroit Stove Works*, 150 U.S. 164). Hence, it would have been obvious to integrate a north bridge with Brickford at the time Applicant made the invention because it only involves routine skill in the art.

Referring to claim 30: Claim 30 is rejected over Brickford as the argument for claim 21 stated above.

Referring to claim 31: Claim 31 is rejected over Brickford as the argument for claims 1, 2, and 21 stated above.

Referring to claim 32: Claim 32 is rejected over Brickford as the argument for claims 1 and 2 stated above.

Referring to claim 33: Claim 33 is rejected over Brickford as the argument for claim 21 stated above.

Referring to claim 34: Claim 34 is rejected over Brickford as the argument for claim 21 stated above.

Referring to claim 35: Claim 35 is rejected over Brickford as the argument for claim 25 stated above.

Art Unit: 2181

Referring to claim 36: Claim 36 is rejected over Brickford as stated above; furthermore, Brickford discloses the internal graphic unit (figure 3, structure 116) is operably configured to provide signals to the internal circuit (figure 3, structure 114) uncorrupted by transmission line effect.

Referring to claim 37: Claim 37 is rejected over Brickford as the argument for claim 4 stated above.

Referring to claim 38: Claim 38 is rejected over Brickford as the argument for claim 5 stated above.

Referring to claim 39: Claim 39 is rejected over Brickford as the argument for claim 6 stated above.

Allowable Subject Matter

7. Claims 7-12, 14, 16-17, and 40 contain allowable subject matter, and claim 40 is allowed.

8. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claim 7: A configurable AGP interface circuit as structurally illustrated in figures 4 and 5 is structured to include a dedicated output buffer for outputting the internal signal to the add-in AGP card and this internal output signal does not go through the select circuit. The circuit is constructed in the structuring arrangement as the followings; a first internal circuit operable to provide a first internal signal via a first internal signal path; an input buffer operable to receive a first external signal via an first external signal path; and a selector circuit coupled to the first internal circuit via the first internal signal path, and to the input buffer, the selector circuit operable to select either the first internal signal or the first external signal to provide a

Art Unit: 2181

selected signal; and an output buffer operative to receive a second internal signal via a second internal signal path and to provide the second internal signal via the first external signal path; and a second internal circuit operable to provide the second internal signal via the second internal signal path and to receive the selected signal via a third internal signal path, the selector circuit inoperable to receive the second internal signal; and the second internal circuit is operable to provide the second internal signal via the second internal signal path to both the first internal circuit and the output buffer.

Referring to claims 8-12 and 14: Claims are allowed because they incorporate the allowable subject matter from claim 7.

Referring to claim 16: A configurable AGP interface circuit as structurally illustrated in figures 4 and 5 is structured to include a dedicated output buffer for outputting the internal signal to the add-in AGP card and this internal output signal does not go through the select circuit. The circuit is constructed in the structuring arrangement as the followings; a configurable interface circuit comprising: a first internal circuit operable to provide a first internal signal via a first internal signal path; an input buffer operable to receive a first external signal via an first external signal path; and a selector circuit coupled to the first internal circuit via the first internal signal path, and to the input buffer, the selector circuit operable to select either the first internal signal or the first external signal to provide a selected signal; a bus bridge, comprising a bus interface, operable to provide a second internal signal to the first internal circuit via a second internal signal path and to receive the selected signal via a third internal signal path, and an output buffer operative to receive the second internal signal via the second internal signal path and to provide

Art Unit: 2181

the second internal signal via the first external signal path such that the input buffer and the selector circuit are inoperable to receive the second internal signal.

Referring to claim 17: Claim is allowed because it incorporates the allowable subject matter from claim 16.

Referring to claim 40: A configurable AGP interface circuit as structurally illustrated in figures 4 and 5 is structured to include a dedicated output buffer for outputting the internal signal to the add-in AGP card and this internal output signal does not go through the select circuit. The circuit is constructed in the structuring arrangement as the followings; an internal graphics controller operable to provide a first internal signal via a first internal signal path; an input buffer operable to receive a first external signal via an first external signal path; a selector circuit coupled to the internal graphics controller via the first internal sigh path and to the input buffer, the selector circuit operable to select either the first internal signal or the first external signal to provide a selected signal; a bus bridge comprising a bus interface operable to provide a second internal signal to the internal graphics controller via a second internal signal path and to receive the selected signal via a third internal signal path; and an output buffer operative to receive the second internal signal via the second internal signal path and to provide the second internal signal via the first external signal path such that the input buffer and the selector circuit are inoperable to receive the second internal signal.

9. Claims 7-12 and 14 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action; and claims 7-12 and 14 are objected to as being dependent upon a rejected base claim, Applicant should

Art Unit: 2181

rewrite them in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant argues that Brickford reference does not have separate data paths (Remark, page 10, last 2 paragraphs, page 11, 1st paragraph, page 13, last 3 lines): Brickford does disclose one internal and one external path. The internal path connects the AGP controller and AGP graphics accelerator, the external path connects the AGP controller and AGP add-in card. Although there is a part of bus been shared by both Brickford's external path and internal path, that does not negate the fact Brickford does have one internal path and one external path.

12. Applicant argues that Brickford does not teach separate paths, Brickford's AGP graphics accelerator add-in card is coupled to the AGP 110 along with the device 124, and quote the column 1 lines 19-20 (Remark, page 11, 2nd paragraph, page 12, last 6 lines): While Applicant quote the column 1, lines 19-20, where it states one bus to support multiple devices, the following lines in the column also states that multiple buses is a common practice in the art.

13. Applicant states that Office Action acknowledges that Brickford fails to teach the input buffer and request the evidential document to support the Official Notice (Remark, page 11, last paragraph, page 13, 1st paragraph): As stated in the previous Office Action, the U.S. Patent No.

Art Unit: 2181

6,133,772 to Drapkin et al. discloses that it is known to one in the computer to equip an input buffer with the AGP.

14. Applicant argues that Brickford reference is silent as to address the echoes or signal reflections from expansion slots (Remark, page 12, first paragraph. Lines 7-11): The echoes and signal reflections are not in any part of claims.

15. In regard Applicant's argument on motivation (Remark, page 13, 2nd paragraph): In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Brickford discloses the AGP selector connecting to the internal AGP and the external AGP, and prior art (Drapkin) shows that it is well-known to assist AGP process with input buffer for performance enhancement.

16. Applicant argues that Brickford does not suggest an internal I/O circuit preventing signals from an external circuit from reaching an internal circuit, but to allow all external signals to pass the AGP bus to connect to the internal circuit (Remark, page 13, 3rd paragraph): The alleged internal circuit accessed by the external signal via the AGP bus is the internal I/O circuit that prevents signals from an external circuit from reaching an internal circuit.

17. Applicant argues that Brickford does not teach the integrated circuit (Remark, page 13, last paragraph, lines 1-4): Although Brickford discloses a bus bridge and a graphic unit

Art Unit: 2181

separately, the court has held that forming in one piece which has formerly been formed in two pieces and put together involves only routine skill in the art (Howard v. Detroit Stove Works, 150 U.S. 164).

18. Applicant argues that Brickford's disable device does not select internal signals or external signals, the disable device merely regulates whether an internal FRAME signal is passed to an external or internal AGP graphics processor (Remark, page 13's last line, page 14, lines 1-3): Examiner disagrees. On Brickford's column 4, lines 47-49, it states that it selectively disabling the video signals. When the apparatus selects one among a plurality of choices and disables the unselected ones, the apparatus is performing the selecting means. The claim language does not specify or limit how this selecting means is carried out.

19. In response that Applicant argues that Brickford does not disclose that the input buffer is inoperable to provide the external signal from the first external signal path to the first internal circuit (Remark, page 14, last paragraph's lines 1-2): The internal circuit and the external circuit are meant to substitute each other in the overall system functions, and the input buffer is to assist conveying the data to the selector circuit; thus, it is inherent for the input buffer replacing each describe a first external inoperable to provide the external signal from the first external signal path to the first internal circuit.

20. In response that Applicant argues that Brickford does not disclose that the output buffer is operable to receive a second internal signal via the second internal path and to provide the second internal signal via the first external signal path (Remark, page 14, 2nd paragraph's lines 10-12): Please see the Rejection above.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,133,772 to Drapkin et al.: Drapkin discloses that it is known to one in the computer to equip an input buffer with the AGP.

U.S. Patent No. 4,529,840 to Colton et al.: Colton discloses the NGP practice.

U.S. Patent No. 6,286,083 to Chin et al.: Chin discloses a system equipping the AGP with the north bridge and the multiplexing for selecting means.

U.S. Patent No. 6,496,894 to Fanning, Blaise B..

U.S. Patent No. 5,321,806 to Meinerth et al..

U.S. Patent No. 5,892,964 and 5,889,970 to Horan et al.

U.S. Patent No. 6,275,240 to Riffault, Patrick Louis-Rene.

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

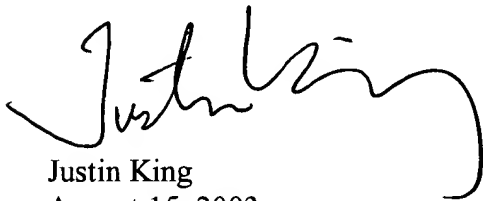
Art Unit: 2181

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

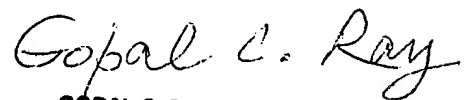
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin King whose telephone number is (703) 305-4571. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephones are unsuccessfully, the examiner's supervisor, Mark Reinhart can be reached at (703) 308-3110.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose number is (703)-306-5631.



Justin King
August 15, 2003


**GOPAL C. RAY
PRIMARY EXAMINER
GROUP 2800**